



Massachusetts Department of
ELEMENTARY & SECONDARY
EDUCATION

*Release of
November 2009
MCAS Retest Items*

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Massachusetts Department of
Elementary and Secondary Education**



This document was prepared by the
Massachusetts Department of Elementary and Secondary Education
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Commissioner of Elementary and Secondary Education

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Commissioner's Foreword

Dear Colleagues:

The vision of the Department of Elementary and Secondary Education is to work in partnership with policy makers, communities, parents, school districts, and students to build a system that will prepare all students to succeed as productive and contributing members of our democratic society and the global economy. To assist in the achievement of this vision, the Department regularly releases MCAS test items to provide information regarding the kinds of knowledge and skills that students are expected to demonstrate. I am pleased to announce all questions from the November 2009 retests are included in this document.

The *Release of November 2009 MCAS Retest Items* is available only through the Department website at www.doe.mass.edu/mcas/testitems.html. The test items for both ELA and Mathematics can be easily printed from this site. I encourage educators to use the relevant sections of this document together with their *Test Item Analysis Report Summaries* and *Test Item Analysis Rosters* as guides for planning changes in curriculum and instruction that may be needed to ensure that schools and districts make regular progress in improving student performance.

Thank you for your support as we work together to strengthen education for our students in Massachusetts.

Sincerely,

Mitchell D. Chester, Ed.D.

Commissioner of Elementary and Secondary Education

I. Document Purpose and Structure

Document Purpose and Structure

Purpose

The purpose of this document is to share with educators and the public all of the test items from the November 2009 MCAS English Language Arts and Mathematics Retests. Local educators will be able to use this information to identify strengths and weaknesses in their curriculum and instruction, and to guide the changes necessary to more effectively meet their students' needs.

This document is also intended to be used by school and district personnel as a companion document to the test item analysis reports. Each school in which a retest was administered receives a November Retest *Test Item Analysis Report Summary* and a *Test Item Analysis Roster* for English Language Arts and Mathematics. These reports provide data generated from student responses. Each report lists, for the school receiving the report, the names of all enrolled students who took the November 2009 Retest in that report's content area, and shows how each student answered each test question (item). The report labels each item as multiple-choice, open-response, short-answer, or writing prompt and identifies the item's MCAS reporting category. Item numbers in this document correlate directly to the "Item Numbers" in the test item analysis reports.

Structure

Chapters II and III of this document contain, respectively, information for the November 2009 English Language Arts and Mathematics Retests. Each of these chapters has three main sections.

The **first section** introduces the chapter by listing the Massachusetts curriculum framework content strands assessed by MCAS in that chapter's content area. These content strands are identical to the MCAS reporting categories under which retest results are reported to schools and districts. The first section also provides the Web address for the relevant framework and the page numbers on which the learning standards assessed by the test items in the chapter can be found. In addition, there is a brief overview of the retest (number of test sessions, types of items, reference materials allowed, and cross-referencing information).

The **second section** contains the test items used to generate November 2009 MCAS student results for that chapter's content area. With the exception of the ELA Composition writing prompt, the test items in this document are shown in the same order and basic format in which they were presented in the test booklets. The Mathematics Reference Sheet used by students during MCAS Mathematics test sessions is inserted immediately following the last question in the Mathematics chapter.

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The **final section** of each chapter is a table that cross-references each item with its MCAS reporting category and with the framework standard it assesses. Correct answers to multiple-choice questions and Mathematics retest short-answer questions are also listed in the table.

Materials presented in this document are **not** formatted **exactly** as they appeared in student test booklets. For example, in order to present items most efficiently in this document, the following modifications have been made:

- Some fonts and/or font sizes may have been changed and/or reduced.
- Some graphics may have been reduced in size from their appearance in student test booklets; however, they maintain the same proportions in each case.
- All references to page numbers in answer booklets have been deleted from the directions that accompany test items.
- The four lined pages provided for students' initial English Language Arts Composition retest drafts are omitted.

II. English Language Arts Retest

A. Composition

B. Reading Comprehension

English Language Arts Retest

Test Structure

The English Language Arts retest was presented in the following two parts:

- the ELA Composition retest, which used a writing prompt to assess learning standards from the Massachusetts *English Language Arts Curriculum Framework*'s **Composition** strand
- the ELA Reading Comprehension retest, which used multiple-choice and open-response questions (items) to assess learning standards from the *English Language Arts Curriculum Framework*'s **Language and Reading and Literature** strands

A. Composition

The English Language Arts (ELA) Composition retest was based on learning standards in the Composition strand of the Massachusetts *English Language Arts Curriculum Framework* (2001). These learning standards appear on pages 72–83 of the *Framework*, which is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, ELA Composition retest results are reported under the **Composition** reporting category.

Test Sessions and Content Overview

The ELA Composition retest included two separate test sessions, administered on the same day with a short break between sessions. During the first session, each student wrote an initial draft of a composition in response to the writing prompt on the next page. During the second session, each student revised his or her draft and submitted a final composition, which was scored in the areas of Topic Development and Standard English Conventions. The Scoring Guides for the MCAS English Language Arts Composition are available at www.doe.mass.edu/mcas/student/elacomp_scoreguide.html.

Reference Materials

At least one English-language dictionary per classroom was provided for student use during ELA Composition retest sessions. The use of bilingual word-to-word dictionaries was allowed for current and former limited English proficient students only. No other reference materials were allowed during either ELA Composition retest session.

Cross-Reference Information

Framework general standards 19–22 are assessed by the ELA Composition.

English Language Arts Retest

November Retest Writing Prompt

WRITING PROMPT

Often in works of literature, a character learns or discovers something that changes his or her life.

From a work of literature you have read in or out of school, select a character who learns or discovers something that changes his or her life. In a well-developed composition, identify the character, describe what the character learns or discovers, and explain how the discovery relates to the work as a whole.

B. Reading Comprehension

The English Language Arts Reading Comprehension retest was based on learning standards in the two content strands of the Massachusetts *English Language Arts Curriculum Framework* (2001) listed below. Page numbers for the learning standards appear in parentheses.

- Language (*Framework*, pages 19–26)
- Reading and Literature (*Framework*, pages 35–64)

The *English Language Arts Curriculum Framework* is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, ELA Reading Comprehension retest results are reported under two MCAS reporting categories: **Language** and **Reading and Literature**, which are identical to the two framework content strands listed above.

Test Sessions

The ELA Reading Comprehension retest included three separate test sessions. Sessions 1 and 2 were both administered on the same day, and Session 3 was administered on the following day. Each session included selected readings, followed by multiple-choice and open-response questions. Reading passages and test items are shown on the following pages as they appeared in test booklets.

Reference Materials

The use of bilingual word-to-word dictionaries was allowed for limited English proficient students only, during all three ELA Reading Comprehension sessions. No other reference materials were allowed during any ELA Reading Comprehension retest session.

Cross-Reference Information

The table at the conclusion of this chapter indicates each item’s reporting category and the framework general standard it assesses. The correct answers for multiple-choice questions are also displayed in the table.

English Language Arts

READING COMPREHENSION: SESSION 1

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

In the 1950s and 1960s, Nelson Mandela protested the discriminatory racial policies of his country, South Africa. These policies, called apartheid, included one set of laws for whites and another for blacks. In 1964, Mandela was sentenced to life in prison for his resistance. However, he continued to lead his people successfully from behind bars. In 1990, Mandela was released from prison; in 1994, he was elected president of his country. Read about his vision for his homeland in his inaugural address and answer the questions that follow.

‘Let freedom reign’

Johannesburg, 10 May 1994

by Nelson Mandela

- 1 Today all of us do, by our presence here, and by our celebrations in other parts of our country and the world, confer glory and hope to newborn liberty.
- 2 Out of the experience of an extraordinary human disaster that lasted too long must be born a society of which all humanity will be proud.
- 3 Our daily deeds as ordinary South Africans must produce an actual South African reality that will reinforce humanity’s belief in justice, strengthen its confidence in the nobility of the human soul and sustain all our hopes for a glorious life for all.
- 4 All this we owe both to ourselves and to the peoples of the world who are so well represented here today.
- 5 To my compatriots, I have no hesitation in saying that each one of us is as intimately attached to the soil of this beautiful country as are the famous jacaranda trees of Pretoria and the mimosa trees of the bushveld.
- 6 Each time one of us touches the soil of this land, we feel a sense of personal renewal. The national mood changes as the seasons change.
- 7 We are moved by a sense of joy and exhilaration when the grass turns green and the flowers bloom.
- 8 That spiritual and physical oneness we all share with this common homeland explains the depth of the pain we all carried in our hearts as we saw our country tear itself apart in a terrible conflict, and as we saw it spurned, outlawed and isolated by the peoples of the world, precisely because it has become the universal base of the pernicious¹ ideology and practice of racism and racial oppression.

¹ *pernicious* — causing great harm; ruinous

- 9 We, the people of South Africa, feel fulfilled that humanity has taken us back into its bosom; that we, who were outlaws not so long ago, have today been given the rare privilege to be host to the nations of the world on our own soil. We thank all our distinguished international guests for having come to take possession with the people of our country of what is, after all, a common victory for justice, for peace, for human dignity.
- 10 We trust that you will continue to stand by us as we tackle the challenges of building peace, prosperity, non-sexism, non-racialism and democracy.
- 11 We deeply appreciate the role that the masses of our people and their political mass democratic, religious, women, youth, business, traditional and other leaders have played to bring about this conclusion. Not least among them is my second deputy president, the honourable F. W. de Klerk.
- 12 We would also like to pay tribute to our security forces, in all their ranks, for the distinguished role they have played in securing our first democratic elections and the transition to democracy, from bloodthirsty forces which still refuse to see the light.
- 13 The time for the healing of the wounds has come. The moment to bridge the chasms that divide us has come. The time to build is upon us. We have, at last, achieved our political emancipation. We pledge ourselves to liberate all our people from the continuing bondage of poverty, deprivation, suffering, gender and other discrimination.
- 14 We succeeded to take our last steps to freedom in conditions of relative peace. We commit ourselves to the construction of a complete, just and lasting peace.
- 15 We have triumphed in the effort to implant hope in the breasts of the millions of our people. We enter into a covenant that we shall build the society in which all South Africans, both black and white, will be able to walk tall, without any fear in their hearts, assured of their inalienable right to human dignity — a rainbow nation at peace with itself and the world.
- 16 As a token of its commitment to the renewal of our country, the new interim Government of National Unity will, as a matter of urgency, address the issue of amnesty² for various categories of our people who are currently serving terms of imprisonment.
- 17 We dedicate this day to all the heroes and heroines in this country and the rest of the world who sacrificed in many ways and surrendered their lives so that we could be free. Their dreams have become reality. Freedom is their reward.
- 18 We are both humbled and elevated by the honour and privilege that you, the people of South Africa, have bestowed on us, as the first president of a united, democratic, non-racial and non-sexist South Africa, to lead our country out of the valley of darkness.
- 19 We understand it still that there is no easy road to freedom. We know it well that none of us acting alone can achieve success. We must therefore act together as a united people, for national reconciliation, for nation building, for the birth of a new world. Let there be justice for all. Let there be peace for all. Let there be work, bread, water and salt for all.
- 20 Let each know that for each the body, the mind and the soul have been freed to fulfill themselves.

² *amnesty* — the act of pardoning a person for political offenses

- 21 Never, never and never again shall it be that this beautiful land will again experience the oppression of one by another and suffer the indignity of being the skunk of the world.
- 22 Let freedom reign. The sun shall never set on so glorious a human achievement. God bless Africa. Thank you.

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- | | |
|---|--|
| <p>1 What is the effect of Mandela’s repeated use of “our” and “we” in the speech?</p> <ul style="list-style-type: none">A. It emphasizes the important role of other countries.B. It emphasizes the strictness of the country’s new laws.C. It suggests that everyone is to blame for the problems of the past.D. It suggests that people must unite to solve the problems of the past. | <p>3 In paragraphs 5–7, what is the most likely reason Mandela refers to the natural imagery of South Africa?</p> <ul style="list-style-type: none">A. to show the need for environmental reformsB. to urge people to continue to live in the countryC. to urge other countries to provide financial assistanceD. to show the essential connection people have to the land |
| <p>2 Based on the speech, what is the “extraordinary human disaster” Mandela refers to in paragraph 2?</p> <ul style="list-style-type: none">A. civil warB. racial oppressionC. his years of imprisonmentD. harmful economic policies | <p>4 In paragraph 13, Mandela uses the metaphor “bridge the chasms” to suggest that people should</p> <ul style="list-style-type: none">A. settle their differences.B. forget their problems.C. defeat their enemies.D. search their souls. |

5 In paragraph 15, the metaphor “a rainbow nation” refers to

- A. the diversity of the people.
- B. the climate of the country.
- C. the landscape of the country.
- D. the richness of the continent.

6 Read the sentence from paragraph 19 in the box below.

We must therefore act together as a united people, for national reconciliation, for nation building, for the birth of a new world.

What does the order of the elements in the series **best** show?

- A. Mandela’s priorities from least to greatest
- B. Mandela’s dreams from a local to a global scale
- C. Mandela’s belief about how the country was saved
- D. Mandela’s ambition to someday rule other countries

7 Read the sentences from paragraph 19 in the box below.

Let there be justice for all. Let there be peace for all. Let there be work, bread, water and salt for all.

What does Mandela emphasize in the sentences?

- A. his belief that his country is better than other countries
- B. the sense that his country’s future is out of his control
- C. his commitment to ideals and everyday necessities
- D. the order in which his goals will be achieved

8 Which word could best replace *token* in paragraph 16?

- A. coin
- B. symbol
- C. advantage
- D. requirement

Question 9 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 9 in the space provided in your Student Answer Booklet.

- 9** Describe what Mandela’s speech reveals about his hopes for a new South Africa. Support your answer with relevant and specific information from the speech.

The memory of swimming at summer camp is significant to the speaker of this poem. Read “The River” and answer the questions that follow.

THE RIVER

- The lifeguard’s whistle organized our swimming
 Around the anchored raft at summer camp,
 Saving us from the tricky channel current.
 When he blew it, we gave in to the system,
 5 Each raising his buddy’s hand in the sudden quiet
 To be reckoned, officially, among the living.
 Half a pair meant someone might have drowned
 Or, more likely, not checking out, gone back
 To his cabin where no one made him buddy,
 10 Where, if he wished, he could desert the raft,
 The restricting whistle, all practiced safety,
 And, dreaming the channel’s bottom, sound
 That deep cut, the rocks’ dark hollows, and the cold.
- I have been back once, when no one was there,
 15 And poked around in the empty cabins
 Boarded against vandals as if something valuable
 Were left to steal, where no one was dreaming.
 Yet, as if in a dream, I saw a name
 The same as mine printed in faded chalk
 20 On a wall, and I took a dented canteen
 With a torn case from a nail rusted with rain.
 It lay on the beach with my clothes while I went swimming
 Where the channel cuts deep across from the steady raft,
 Without a buddy. In over my head,
 25 I finned to the bottom, expelling breath
 Until the cold pressure cracked in my ears,
 Then fought that pressure upward with my arms
 And shot, like a dolphin, high
 Into the weightless air
 30 Over and over again, each time higher,
 Until I could use the bottom as a springboard.
 However high I went, there was always bottom.

After, I took the canteen to the springs
Which feed the river, and filled it.
35 It hangs now on a nail in my room,
And when the season's dry and the city liquid
Tastes too much of metal and the system
That pumps it to my taps,
I drink that water, and find it cool and clear.

—*Dabney Stuart*

“The River” by Dabney Stuart, from *The Diving Bell*. Copyright © 1966 by Dabney Stuart. Reprinted by permission of the author.

- 10 In lines 1–6, what do the words “organized,” “anchored,” and “officially” emphasize about the speaker’s swimming classes at camp?

A. They were highly structured.
B. They were generally boring.
C. They were very competitive.
D. They were very exhausting.

- 11 Read lines 10–13 in the box below.

Where, if he wished, he could
desert the raft, / The restricting
whistle, all practiced safety, / And,
dreaming the channel’s bottom,
sound / That deep cut, the rocks’
dark hollows, and the cold.

The lines reveal that the speaker’s youthful desire was to

- A. return home from camp.
B. learn how to swim more safely.
C. attempt a dive to the bottom of the river.
D. discover more about the history of the river.

- 12 In lines 28–30, what is the speaker **most likely** expressing by repeatedly shooting through the water “like a dolphin, high / Into the weightless air”?
- A. a need for order and responsibility
 - B. gratefulness to his camp counselors
 - C. satisfaction with his swimming skills
 - D. a celebration of risk and independence
- 13 In lines 33–39, what is the **most likely** reason the speaker prefers the river “water” to the city “liquid”?
- A. The river water reminds him of friends.
 - B. The river water contains more nutrients.
 - C. The river water represents escape from convention.
 - D. The river water symbolizes the deterioration of the camp.

English Language Arts

READING COMPREHENSION: SESSION 2

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and two open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

In this excerpt from The Natural, by Bernard Malamud, 19-year-old Roy Hobbs is traveling by train to Chicago for a baseball tryout with his friend and baseball scout Sam Simpson. Also on the train are sportswriter Max Mercy and the Whammer, the best hitter in the American League. When the train stops near a carnival, Sam bets the Whammer that Roy can strike him out. A crowd gathers to watch the contest, including Harriet, a woman from the train whom both Roy and the Whammer are interested in. Read the excerpt and answer the questions that follow.

from **The Natural** by Bernard Malamud

- 1 The crowd moved in a body across the tracks, the kids circling around to get a good view, and the engineer and fireman watching from their cab window.
- 2 Sam cornered one of the kids who lived nearby and sent him home for a fielder's glove and his friend's catcher's mitt. While they were waiting, for protection he buttoned underneath his coat the washboard Roy had won. Max drew a batter's box alongside a piece of slate. He said he would call the throws and they would count as one of the three pitches only if they were over or if the Whammer swung and missed.
- 3 When the boy returned with the gloves, the sun was going down, and though the sky was aflame with light all the way to the snowy mountain peak, it was chilly on the ground.
- 4 Breaking the seal, Sam squeezed the baseball box and the pill shot up like a greased egg. He tossed it to Mercy, who inspected the hide and stitches, then rubbed the shine off and flipped it to Roy.
- 5 "Better throw a couple of warm-ups."
- 6 "My arm is loose," said Roy.
- 7 "It's your funeral."
- 8 Placing his bassoon case out of the way in the grass, Roy shed his coat. One of the boys came forth to hold it.
- 9 "Be careful you don't spill the pockets," Roy told him.
- 10 Sam came forward with the catcher's glove on. It was too small for his big hand but he said it would do all right.
- 11 "Sam, I wish you hadn't bet that money on me," Roy said.
- 12 "I won't take it if we win, kiddo, but just let it stand if we lose," Sam said, embarrassed.
- 13 "We came by it too hard."
- 14 "Just let it stand so."

15 He cautioned Roy to keep his pitches inside, for the Whammer was known to gobble them on the outside corner.

16 Sam returned to the plate and crouched behind the batter, his knees spread wide because of the washboard. Roy drew on his glove and palmed the ball behind it. Mercy, rubbing his hands to warm them, edged back about six feet behind Sam.

17 The onlookers retreated to the other side of the tracks, except Harriet, who stood without fear of fouls up close. Her eyes shone at the sight of the two men facing one another.

18 Mercy called, “Batter up.”

19 The Whammer crowded the left side of the plate, gripping the heavy bat low on the neck, his hands jammed together and legs plunked evenly apart. He hadn’t bothered to take off his coat. His eye on Roy said it spied a left-handed monkey.

20 “Throw it, Rube,* it won’t get no lighter.”

21 Though he stood about sixty feet away, he loomed up gigantic to Roy, with the wood held like a caveman’s ax on his shoulder. His rocklike frame was motionless, his face impassive, unsmiling, dark.

22 Roy’s heart skipped a beat. He turned to gaze at the mountain.

23 Sam whacked the leather with his fist. “Come on, kiddo, wham it down his whammy.”

. . .

24 Roy stretched loosely, rocked back on his left leg, twirling the right a little like a dancer, then strode forward and threw with such force his knuckles all but scraped the ground on the follow-through.

25 At thirty-three the Whammer still enjoyed exceptional eyesight. He saw the ball spin off Roy’s fingertips and it reminded him of a white pigeon he had kept as a boy, that he would send into flight by flipping it into the air. The ball flew at him and he was conscious of its bird-form and white flapping wings, until it suddenly disappeared from view. He heard a noise like the bang of a firecracker at his feet and Sam had the ball in his mitt. Unable to believe his ears he heard Mercy intone a reluctant strike.

26 Sam flung off the glove and was wringing his hand.

27 “Hurt you, Sam?” Roy called.

28 “No, it’s this dang glove.”

29 Though he did not show it, the pitch had bothered the Whammer no end. Not just the speed of it but the sensation of surprise and strangeness that went with it—him batting here on the railroad tracks, the crazy carnival, the drunk catching and a clown pitching, and that queer dame Harriet, who had five minutes ago been patting him on the back for his skill in the batting cage, now eyeing him coldly for letting one pitch go by.

30 He noticed Max had moved farther back.

31 “How the hell you expect to call them out there?”

* *Rube* — a slang term used to describe an unsophisticated person from the country

- 32 “He looks wild to me.” Max moved in.
33 “Your knees are knockin’,” Sam tittered.
34 “Mind your business, rednose,” Max said.
35 “You better watch your talk, mister,” Roy called to Mercy.
36 “Pitch it, greenhorn,” warned the Whammer.
37 Sam crouched with his glove on. “Do it again, Roy. Give him something simular.”
38 “Do it again,” mimicked the Whammer. To the crowd, maybe to Harriet, he held up a vaunting finger showing there were other pitches to come.
39 Roy pumped, reared and flung.
40 The ball appeared to the batter to be a slow spinning planet looming toward the earth. For a long light-year he waited for this globe to whirl into the orbit of his swing so he could bust it to smithereens that would settle with dust and dead leaves into some distant cosmos. At last the unseeing eye, maybe a fortuneteller’s lit crystal ball—anyway, a curious combination of circles—drifted within range of his weapon, or so he thought, because he lunged at it ferociously, twisting round like a top. He landed on both knees as the world floated by over his head and hit with a *whup* into the cave of Sam’s glove.
41 “Hey, Max,” Sam said, as he chased the ball after it had bounced out of the glove, “how do they pernounce Whammer if you leave out the W?”
42 “Strike,” Mercy called long after a cheer (was it a jeer?) had burst from the crowd.
43 “What’s he throwing,” the Whammer howled, “spitters?”
44 “In the pig’s poop.” Sam thrust the ball at him. “It’s drier than your grandaddy’s scalp.”
45 “I’m warning him not to try any dirty business.”
46 Yet the Whammer felt oddly relieved. He liked to have his back crowding the wall, when there was a single pitch to worry about and a single pitch to hit. Then the sweat began to leak out of his pores as he stared at the hard, lanky figure of the pitiless pitcher, moving, despite his years and a few waste motions, like a veteran undertaker of the diamond, and he experienced a moment of depression.
47 Sam must have sensed it, because he discovered an unexpected pity in his heart and even for a split second hoped the idol would not be tumbled. But only for a second, for the Whammer had regained confidence in his known talent and experience and was taunting the greenhorn to throw.
48 Someone in the crowd hooted and the Whammer raised aloft two fat fingers and pointed where he would murder the ball, where the gleaming rails converged on the horizon and beyond was invisible.
49 Roy raised his leg. He smelled the Whammer’s blood and wanted it, and through him the worm’s he had with him, for the way he had insulted Sam.
50 The third ball slithered at the batter like a meteor, the flame swallowing itself. He lifted his club to crush it into a universe of sparks but the heavy wood dragged, and though he willed to destroy the sound he heard a gong bong and realized with sadness that the ball he had expected to hit had long since been part of the past; and though Max could not cough the fatal word out of his throat, the Whammer understood he was, in the truest sense of it, out.

- 51 The crowd was silent as the violet evening fell on their shoulders.
- 52 For a night game, the Whammer harshly shouted, it was customary to turn on lights. Dropping the bat, he trotted off to the train, an old man.

The Natural by Bernard Malamud. Copyright © 1952 and renewed 1980 by Bernard Malamud. Reprinted by permission of Russell & Volkening as agents for the author.

- 14 Which of the following sentences from the excerpt **best** reveals Roy's nervousness prior to the contest?
- A. "My arm is loose," said Roy." (paragraph 6)
 - B. "Be careful you don't spill the pockets," Roy told him." (paragraph 9)
 - C. "Roy drew on his glove and palmed the ball behind it." (paragraph 16)
 - D. "Roy's heart skipped a beat." (paragraph 22)
- 15 In paragraph 7, what does Max Mercy assume when he says to Roy, "It's your funeral"?
- A. Roy will become injured by the baseball.
 - B. Roy and Mercy will get into a fight.
 - C. Sam will be angry with Roy.
 - D. The Whammer will defeat Roy.
- 16 In paragraph 17, what is the **most likely** reason Harriet's "eyes shone at the sight of the two men facing one another"?
- A. She is excited to see them compete.
 - B. She is happy to see them having fun.
 - C. She is afraid they will hurt each other.
 - D. She is upset that they are ignoring her.
- 17 In paragraph 21, what is the effect of the description of the Whammer?
- A. It makes him seem ancient.
 - B. It makes him seem menacing.
 - C. It makes him seem uninterested.
 - D. It makes him seem unintelligent.

- 18 In paragraphs 40 and 50, astronomical references are used to emphasize

- A. the darkness of the day.
- B. Roy's chronic wildness.
- C. the power of the pitches.
- D. Roy's strange personality.

- 19 In the excerpt, what is the effect of the author's extended description of each pitch?

- A. It creates a suspenseful mood.
- B. It shows the details of the setting.
- C. It emphasizes the length of the contest.
- D. It emphasizes the crowd's disappointment.

- 20 Read the statement from paragraph 50 in the box below.

. . . and though Max could not cough the fatal word out of his throat, the Whammer understood he was, in the truest sense of it, out.

What is implied by the phrase "in the truest sense of it"?

- A. The Whammer has lost his idol status.
- B. The Whammer can no longer play baseball.
- C. The Whammer is relieved the contest is over.
- D. The Whammer is no longer welcome at the carnival.

- 21 Which of the following is the **best** replacement for *impassive* as it is used in paragraph 21?

- A. hidden
- B. apologetic
- C. questioning
- D. expressionless

Question 22 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 22 in the space provided in your Student Answer Booklet.

- 22** Describe the Whammer’s changing moods throughout the excerpt. Support your answer with relevant and specific information from the excerpt.

In this story, the author describes the remarkable recovery of a dying hummingbird that is found by his gentle neighbor one winter day in California. Read the story and answer the questions that follow.

The Hummingbird That Lived Through Winter

by William Saroyan

1 There was a hummingbird once which in the wintertime did not leave our neighborhood in Fresno, California.

2 I'll tell you about it.

3 Across the street lived old Dikran, who was almost blind. He was past eighty and his wife was only a few years younger. They had a little house that was as neat inside as it was ordinary outside—except for old Dikran's garden, which was the best thing of its kind in the world. Plants, bushes, trees—all strong, in sweet black moist earth—whose guardian was old Dikran. All things from the sky loved this spot in our poor neighborhood, and old Dikran loved *them*.

4 One freezing Sunday, in the dead of winter, as I came home from Sunday School I saw old Dikran standing in the middle of the street trying to distinguish what was in his hand. Instead of going into our house to the fire, as I had wanted to do, I stood on the steps of the front porch and watched the old man. He would turn around and look upward at his trees and then back to the palm of his hand. He stood in the street at least two minutes and then at last he came to me. He held his hand out, and in Armenian* he said, "What is this in my hand?"

5 I looked.

6 "It is a hummingbird," I said half in English and half in Armenian. Hummingbird I said in English because I didn't know its name in Armenian.

7 "What is that?" old Dikran asked.

8 "The little bird," I said. "You know. The one that comes in the summer and stands in the air and then shoots away. The one with the wings that beat so fast you can't see them. It's in your hand. It's dying."

9 "Come with me," the old man said. "I can't see, and the old lady's at church. I can feel its heart beating. Is it in a bad way? Look again, once."

10 I looked again. It was a sad thing to behold. This wonderful little creature of summertime in the big rough hand of the old peasant. Here it was in the cold of winter, absolutely helpless and pathetic, not suspended in a shaft of summer light, not the most alive thing in the world, but the most helpless and heartbreaking.

11 "It's dying," I said.

12 The old man lifted his hand to his mouth and blew warm breath on the little thing in his hand which he could not even see. "Stay now," he said in Armenian. "It is not long till summer. Stay, swift and lovely."

* *Armenian* — language spoken by the people of Armenia

- 13 We went into the kitchen of his little house, and while he blew warm breath on the bird he told me what to do.
- 14 “Put a tablespoonful of honey over the gas fire and pour it into my hand, but be sure it is not too hot.”
- 15 This was done.
- 16 After a moment the hummingbird began to show signs of fresh life. The warmth of the room, the vapor of the warm honey—and, well, the will and love of the old man. Soon the old man could feel the change in his hand, and after a moment or two the hummingbird began to take little dabs of the honey.
- 17 “It will live,” the old man announced. “Stay and watch.”
- 18 The transformation was incredible. The old man kept his hand generously open, and I expected the helpless bird to shoot upward out of his hand, suspend itself in space, and scare the life out of me—which is exactly what happened. The new life of the little bird was magnificent. It spun about in the little kitchen, going to the window, coming back to the heat, suspending, circling as if it were summertime and it had never felt better in its whole life.
- 19 The old man sat on the plain chair, blind but attentive. He listened carefully and tried to see, but of course he couldn’t. He kept asking about the bird, how it seemed to be, whether it showed signs of weakening again, what its spirit was, and whether or not it appeared to be restless; and I kept describing the bird to him.
- 20 When the bird was restless and wanted to go, the old man said, “Open the window and let it go.”
- 21 “Will it live?” I asked.
- 22 “It is alive now and wants to go,” he said. “Open the window.”
- 23 I opened the window, the hummingbird stirred about here and there, feeling the cold from the outside, suspended itself in the area of the open window, stirring this way and that, and then it was gone.
- 24 “Close the window,” the old man said.
- 25 We talked a minute or two and then I went home.
- 26 The old man claimed the hummingbird lived through that winter, but I never knew for sure. I saw hummingbirds again when summer came, but I couldn’t tell one from the other.
- 27 One day in the summer I asked the old man.
- 28 “Did it live?”
- 29 “The little bird?” he said.
- 30 “Yes,” I said. “That we gave the honey to. You remember. The little bird that was dying in the winter. Did it live?”
- 31 “Look about you,” the old man said. “Do you see the bird?”
- 32 “I see hummingbirds,” I said.
- 33 “Each of them is our bird,” the old man said. “Each of them, each of them,” he said swiftly and gently.

“The Hummingbird That Lived Through Winter” by William Saroyan, from *My Kind of Crazy, Wonderful People: Seventeen Stories and a Play*. Copyright © 1944 and renewed 1972 by William Saroyan. Reprinted by permission of Harcourt, Inc.

- 23 In paragraph 4, why does the narrator stop as he walks home from Sunday School?
- A. He sees a hummingbird in the garden.
 - B. He is worried about old Dikran's health.
 - C. He is curious about old Dikran's actions.
 - D. He sees that the summer garden is dying.

- 24 According to paragraph 16, how does old Dikran know that the bird is recovering?
- A. He sees the motion of the bird's flight.
 - B. He hears the sound of the bird's wings.
 - C. He feels the movement of the bird's body.
 - D. He hears the narrator describe the bird's actions.

- 25 How does old Dikran **best** show his understanding of the hummingbird's needs?
- A. He asks the narrator what the bird is doing.
 - B. He allows the bird to fly around in his home.
 - C. He sets the bird free when it is ready to fly away.
 - D. He looks for the same bird the following summer.

- 26 Read the description from paragraph 10 in the box below.

Here it was in the cold of winter, absolutely helpless and pathetic, not suspended in a shaft of summer light, not the most alive thing in the world, but the most helpless and heartbreaking.

What is the meaning of the word *pathetic* in the description?

- A. pitiful
- B. patient
- C. peculiar
- D. peaceful

Question 27 is an open-response question.

- Read the question carefully.
- Explain your answer.
- Add supporting details.
- Double-check your work.

Write your answer to question 27 in the space provided in your Student Answer Booklet.

- 27 Read the sentence from paragraph 3 in the box below.

All things from the sky loved this spot in our poor neighborhood, and old Dikran loved *them*.

Explain how the story illustrates the accuracy of the narrator's statement. Support your answer with relevant and specific details from the story.

English Language Arts

READING COMPREHENSION: SESSION 3

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

Honey bees are kept in an apiary, a collection of hives located in a place that maximizes the amount of honey the bees produce. Read this excerpt about the characteristics of a good apiary site and answer the questions that follow.

WHAT IS A GOOD APIARY SITE?

by Roger A. Morse

- 1 A good apiary site is one that is secluded, exposed to full sunlight, and close to a multitude of flowering plants; it must have good air circulation and water drainage, and a reliable source of fresh water. It is helpful to have a small building nearby in which beekeeping equipment can be kept. An access road that is usable all year round is a necessity.
- 2 The apiary site should be secluded because some people are afraid of bees, and others might vandalize the hives. While vandalism is not a serious problem, it is a temptation, especially for a youngster, to molest or even tip over a hive of bees. If an apiary site is hidden, this means that the individual bees leaving the hive must fly up and over surrounding vegetation. It also means that they cannot accidentally fly into someone walking in the vicinity. This is an interesting aspect of bee biology. Close to the hive almost any bee is quick to defend the nest. A bee disturbed in the field, on the other hand, usually flees the site of danger or interruption as soon as possible. Although an individual can be stung when not near a nest, it is a rare occurrence. Quite frequently, too, people who have been stung while walking through a field have offended a wasp, not a bee. Unfortunately, most people do not know the difference between a wasp and a bee.
- 3 We have kept an apiary of 20 to 40 colonies of bees only a few hundred yards from the active part of the Cornell University campus for many years with no difficulty. Our apiary is surrounded by a hedge about 15 feet high and about as thick. The hedge consists of evergreens, and inside the row of evergreens is a second hedge of deciduous bushes that grow to about 10 feet in height. The bees must fly up and over the hedge to forage; they are also hidden from view. We have the room to grow such a large hedge, but in more confined areas a board fence would serve the same purpose. Commercial beekeepers often place their apiaries in a woods, usually close to a good road, but hidden just enough so the colonies cannot be seen by people driving by.
- 4 An apiary should be exposed to as much sunlight as possible. Foraging bees will fly to the field earlier in the morning and will work later in the evening if their hive is warmed by the sun's rays. This is especially true in the spring and fall, critical times for honey bee colonies. A sun-warmed colony with a large force of bees to send into the field will gather more honey than a colony that is shaded and cool and has a smaller field force.

- 5 Bees maintain a brood* rearing temperature of about 92° to 96°F (33° to 35°C). If their hives are warm and dry, fewer bees are required to produce the energy to maintain this temperature, another reason sunlight is important. The maintenance of a uniform temperature within the colony is also important in helping the colony to control certain diseases that can occur when the brood rearing temperature falls. Critical bee diseases—for example, sacbrood and European foulbrood—develop only in colonies under stress. A hive that is cool because of an improper location is one important stress factor that can be eliminated by the beekeeper.
- 6 Perhaps more important to the beginner is the question of hive temperament. Bees, or at least colonies of bees, have a temperament. On warm days, when the colony is able to maintain normal activities with little or no difficulty, the bees within the colony are much less inclined to sting. Experienced beekeepers will testify to the differences in stinging behavior between bees exposed to sun and those in shade; bees in full sunlight always have a much better temperament.
- 7 Good air circulation and water drainage are important in an apiary. It is especially important to keep colonies of honey bees dry. Colonies that are damp or have wet bottomboards have difficulty maintaining a normal brood rearing temperature. A dry hive is a healthier hive. Honey bees also give off large quantities of metabolic water when they eat honey. It is important that water be allowed to escape from the hive and not condense inside. If moisture condenses in or near the brood rearing area, it will cool the nest and make it more difficult for the bees to rear brood.
- 8 The best location for an apiary is on the side of a hill that slopes to the east or south and is devoid of trees in the immediate vicinity that might shade the location. While trees for a windbreak are helpful, they should not be too close to the site.
- 9 Bees collect water to dilute the honey they feed to brood and also to air-condition their nest. In the spring, water may be a critical factor for a honey bee colony. If fresh water is not available nearby, it should be provided. In remote locations a 55-gallon drum filled with water and containing some straw, leaves, or branches onto which the bees might crawl while collecting water, will provide the bees with water for up to a week or 10 days. In the home apiary, it may be possible to allow a water faucet hose to drip onto a long board from which the water may be collected by the bees. In the northern states, beekeepers will notice that the number of bees at a watering site will increase greatly during July and August, when it becomes dry, indicating the bees' need for water. The beekeeper who locates the apiary near a source of clean water will save the bees much work.
- 10 Approximately one cell of honey and one cell of pollen are required to produce a young bee. While it is true that a bee may fly as much as eight or nine miles, if necessary, to collect pollen and nectar, research shows that colonies that gather most of their food within a half-mile radius prosper much more than those whose field force

* *brood* — the offspring of animals or insects

must fly further. Beekeeping is limited by the natural vegetation available to the field bees. Even the best physical location is worthless without an abundance of pollen- and nectar-producing plants.

“What Is a Good Apiary Site?” by Roger A. Morse, from *The New Complete Guide to Beekeeping*. Copyright © 1994 by Roger A. Morse. Reprinted by permission of The Countryman Press/W.W. Norton and Company, Inc.

28 According to paragraph 2, what is the **main** reason for locating an apiary in a secluded spot?

- A. to keep people from disturbing the bees
- B. to make sure it is far from other apiaries
- C. to make sure fresh water is nearby
- D. to give the bees access to fresh air

29 What does the first sentence of paragraph 3 reveal about the author?

- A. His main job is to perform scientific experiments on bees.
- B. His advice is supported by his experience with bees.
- C. He feels keeping bees requires little effort.
- D. He sells honey from his own beehives.

30 Based on paragraph 4, how would an apiary that is exposed to a lot of sunlight differ from one that gets relatively little sunlight?

- A. It would be more productive.
- B. It would produce larger bees.
- C. It would become dangerously hot.
- D. It would be exposed to vandalism.

31 Based on paragraph 5, what contributes **most** to successful brood rearing?

- A. the hive’s age
- B. the hive’s size
- C. the hive’s location
- D. the hive’s temperature

- 32 According to paragraph 7, wet bottomboards are a sign that
- A. the hive is not ventilated properly.
 - B. the hive is not storing water well.
 - C. the bees are too far away from flowers.
 - D. the bees are producing too much water.

- 33 Based on paragraphs 7 and 8, what is **most likely** true about wind and apiaries?
- A. Apiaries need to be tied down in windy areas.
 - B. Apiaries should be located in windy areas.
 - C. Apiaries benefit from moderate winds.
 - D. Apiaries need wind to chill the hives.

- 34 Read the sentence from paragraph 2 in the box below.

While vandalism is not a serious problem, it is a temptation, especially for a youngster, to molest or even tip over a hive of bees.

Which of the following words is the **best** replacement for the word *While* in the sentence?

- A. Since
 - B. Because
 - C. Although
 - D. Whenever
- 35 In paragraph 4, *foraging* bees are
- A. becoming angry.
 - B. looking for food.
 - C. looking for mates.
 - D. defending the hive.

Question 36 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 36 in the space provided in your Student Answer Booklet.

- 36** Based on the excerpt, explain how choosing a poor apiary site can put bees under stress. Support your answer with relevant and specific information from the excerpt.

The following story is a traditional Irish folktale with an important lesson. Read the folktale and answer the questions that follow.

How God's Wheel Turns

1 The wheel turns, they say, and ill luck is on one side of it.

2 A poor scholar came to a farmer's house one evening and asked for lodgings. The farmer said he could stay and welcome. He got a good supper, and the two of them spent a good part of the night talking. The poor scholar had great learning and, faith, the farmer wasn't bad either. The farmer asked questions that the other man couldn't answer—maybe even the farmer himself couldn't answer them.

3 As they chatted, the farmer finally asked, "Could you tell me what God is doing at this very moment?"

4 "That's a very hard question to answer," said the poor scholar. "I'd want time to think over it. Wait until the morning, and I might have the answer for you."

5 "That'll do fine," said the farmer.

6 They went to bed, and when they got up in the morning, they ate a good breakfast.

7 "Now," said the poor scholar when they had eaten, "the question you put to me last night was a very hard one. But, what do you think? Didn't I solve it in my sleep?"

8 "Well, what was God doing then?" asked the farmer.

9 "He was making a wheel. That wheel turns very slowly, and the man that was on top yesterday will be at the bottom tomorrow."

10 "You have answered it well," said the farmer.

11 "I may have even a better answer for you the next time we meet," said the poor scholar.

12 He left the farmer and traveled on until he reached a gentleman's house. This gentleman had a young family rising up, and he took in the poor scholar to teach them. He remained there until he had scholars made of them.

13 "I'm very thankful to you," said the gentleman. "You have spent a long time traveling about, and the best thing you can do now is to settle down and have a home of your own. I'll give you a place for the rest of your life, if you wish to remain here."

14 The poor scholar thanked him and said that he would stay. The gentleman gave him a house and a piece of land, and he got married and settled down there. He got on well. One evening as night was falling, he was standing in the doorway when he saw a small grayhaired old man coming toward the house with a bag on his back.

15 When the old man approached, he spoke, "Would you let me stay till morning? I'm weary from the road."

16 "I will and welcome," said the poor scholar. "Come in. Throw aside the bag and sit by the fire."

- 17 The old man made his way in and sat down by the fire. The poor scholar told his wife to get supper ready for him, and when he had eaten, they started to chat. The poor scholar asked him where he came from, how long he had been on the road, and so on.
- 18 “There was a time, and ’tis little I thought that I’d be the way I am,” said the old man. “I had a fine place of my own once, but I gave it to my son, and in less than two years I was coming in the way of his wife in whatever corner of the house I’d be. She finally ordered me to take my bag with me and get out. I have been on the road ever since.”
- 19 Who was he but the farmer who had given the poor scholar lodgings some years before!
- 20 “Well,” said the poor scholar, “whether your life is to be long or short, you are to stay here in my house and you will want for nothing. Do you remember the question you asked the poor scholar the night you gave him lodgings? He told you he would have an even better answer to it the next time ye met.”
- 21 “I remember it well,” said the old man.
- 22 “Well I’m the poor scholar who was with you that night. You were strong and independent at that time, but see how the wheel has turned with ill luck on one side of it.”
- 23 The old man had not recognized him until then. He remained with the poor scholar for the rest of his life, and had a good time until he died.

“How God’s Wheel Turns” translated by Sean O’Sullivan, from *Folktales of Ireland*. Copyright © 1966 by the University of Chicago. Reprinted by permission of the University of Chicago Press.

37 What is the **main** purpose of the first sentence of the folktale?

- A. to describe the setting
- B. to identify the narrator
- C. to foreshadow the events
- D. to describe the characters

38 In paragraph 12, the phrase “he had scholars made of them” means

- A. the scholar educated the children well.
- B. the scholar had help teaching the children.
- C. the scholar learned a lot from the children.
- D. the scholar persuaded the children to become teachers.

- 39 What does the first sentence of paragraph 18 reveal about the old man?
- A. He had been homeless in the past.
 - B. He liked traveling around the country.
 - C. He did not think he would be homeless.
 - D. He did not like to think about his predicament.

- 40 Based on the folktale, how do the lives of the old man and the scholar reflect the moral of the story?
- A. Both men lived for a long time.
 - B. Both men learned how to be more generous.
 - C. Both men realized the importance of friendship.
 - D. Both men experienced great changes in their fortunes.

English Language Arts
Reading Comprehension Retest
November 2009 Released Items:
Reporting Categories, Standards, and Correct Answers*

Item No.	Page No.	Reporting Category	Standard	Correct Answer (MC)*
1	10	<i>Reading and Literature</i>	15	D
2	10	<i>Reading and Literature</i>	8	B
3	10	<i>Reading and Literature</i>	13	D
4	10	<i>Reading and Literature</i>	15	A
5	11	<i>Reading and Literature</i>	15	A
6	11	<i>Reading and Literature</i>	13	B
7	11	<i>Reading and Literature</i>	13	C
8	11	<i>Language</i>	4	B
9	12	<i>Reading and Literature</i>	11	
10	15	<i>Reading and Literature</i>	15	A
11	15	<i>Reading and Literature</i>	14	C
12	16	<i>Reading and Literature</i>	14	D
13	16	<i>Reading and Literature</i>	14	C
14	20	<i>Reading and Literature</i>	12	D
15	20	<i>Reading and Literature</i>	12	D
16	20	<i>Reading and Literature</i>	12	A
17	20	<i>Reading and Literature</i>	15	B
18	21	<i>Reading and Literature</i>	15	C
19	21	<i>Reading and Literature</i>	15	A
20	21	<i>Reading and Literature</i>	11	A
21	21	<i>Language</i>	4	D
22	22	<i>Reading and Literature</i>	12	
23	25	<i>Reading and Literature</i>	12	C
24	25	<i>Reading and Literature</i>	8	C
25	25	<i>Reading and Literature</i>	12	C
26	25	<i>Language</i>	4	A
27	26	<i>Reading and Literature</i>	11	
28	29	<i>Reading and Literature</i>	8	A
29	29	<i>Reading and Literature</i>	13	B
30	29	<i>Reading and Literature</i>	13	A
31	29	<i>Reading and Literature</i>	8	D
32	30	<i>Reading and Literature</i>	8	A
33	30	<i>Reading and Literature</i>	13	C
34	30	<i>Language</i>	4	C
35	30	<i>Language</i>	4	B
36	31	<i>Reading and Literature</i>	13	
37	34	<i>Reading and Literature</i>	16	C
38	34	<i>Reading and Literature</i>	8	A
39	35	<i>Reading and Literature</i>	8	C
40	35	<i>Reading and Literature</i>	16	D

*Answers are provided here for multiple-choice items only.

III. Mathematics Retest

Mathematics Retest

The Mathematics retest was based on learning standards in the *Massachusetts Mathematics Curriculum Framework* (2000). The *Framework* identifies five major content strands, listed below.

- Number Sense and Operations
- Patterns, Relations, and Algebra
- Geometry
- Measurement
- Data Analysis, Statistics, and Probability

The grades 9–10 learning standards for these strands appear on pages 72–75 of the *Mathematics Curriculum Framework*, which is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, Mathematics retest results are reported under five MCAS reporting categories, which are identical to the five *Mathematics Curriculum Framework* content strands listed above.

Test Sessions

The Mathematics retest included two separate test sessions, which were administered on consecutive days. Each session included multiple-choice and open-response items. Session 1 also included short-answer questions.

Reference Materials and Tools

Each student taking the Mathematics retest was provided with a Grade 10 Mathematics Reference Sheet and was allowed to refer to it at any time during testing. A copy of the reference sheet follows the final question in this chapter.

During session 2, each student had sole access to a calculator with at least four functions and a square root key. Calculator use was not allowed during session 1.

The use of bilingual word-to-word dictionaries was allowed for limited English proficient students only during both Mathematics retest sessions. No other reference tools or materials were allowed.

Cross-Reference Information

The table at the conclusion of this chapter indicates each item’s reporting category and the framework learning standard it assesses. The correct answers for multiple-choice and short-answer items are also displayed in the table.

Mathematics

SESSION 1

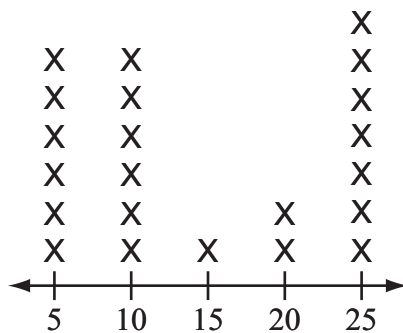
You may use your reference sheet during this session.
You may **not** use a calculator during this session.



DIRECTIONS

This session contains fourteen multiple-choice questions, four short-answer questions, and three open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

- 1 The line plot below shows the amount of money, in dollars, that each person donated at a fundraiser for a library.

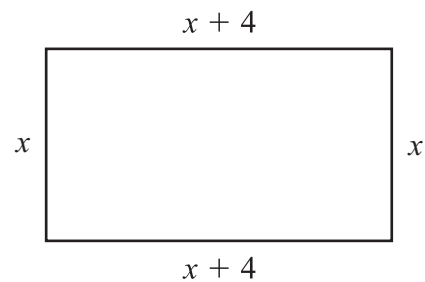


Amount of Money Donated
(in dollars)

What is the median amount of money donated?

- A. \$10
- B. \$15
- C. \$20
- D. \$25

- 2 A rectangle and expressions representing the lengths, in inches, of its sides are shown below.



Which of the following expressions represents the perimeter, in inches, of the rectangle?

- A. $2x + 4$
- B. $2x + 8$
- C. $4x + 4$
- D. $4x + 8$

- 3 The numbers of hours Eric worked each of five days are shown in the table below.

**Numbers of Hours
Worked per Day**

Day	Number of Hours
Monday	1
Tuesday	2
Wednesday	4
Thursday	6
Friday	2

What is the mean number of hours worked per day for the five days?

- A. 2
- B. 3
- C. 4
- D. 5

- 4 Which of the following is equivalent to the expression below?

$$-(6 - 13)$$

- A. $6 - 13$
- B. $6 + 13$
- C. $-6 - 13$
- D. $-6 + 13$

- 5 Which of the following is equivalent to the expression below?

$$(2x + 5)(x - 4)$$

- A. $2x^2 - 3x - 20$
- B. $2x^2 + 13x + 1$
- C. $2x^2 - 20$
- D. $2x^2 + 1$

- 6 The numbers of minutes that Dr. Greene’s patients spent in the waiting room one day are listed in the box below.

4, 22, 3, 15, 6, 12, 8, 5, 20, 6, 9

What is the median number of minutes the patients spent in the waiting room?

- A. 6
- B. 8
- C. 10
- D. 12

- 7 What is the value of the expression below?

$$360 \div (10 + 5 \cdot 6)$$

- A. 4
- B. 9
- C. 66
- D. 246

- 8 An electronics store is offering a discount of \$35 off the original price of a television. This discount is equal to 5% of the original price.

What is the original price?

- A. \$70
- B. \$175
- C. \$700
- D. \$1750

- 9 Chaz sold tickets to a concert. He sold tickets in advance and tickets at the door.

- Tickets sold in advance cost \$8 each.
- Tickets sold at the door cost \$12 each.

Chaz sold 200 tickets in all. The total cost of all the tickets Chaz sold was \$2116.

Let x = the number of tickets Chaz sold in advance, and let y = the number of tickets he sold at the door.

Which of the following systems of equations represents this information?

- A. $8x + 8y = 200$
 $12x + 12y = 2116$
- B. $8x + 8y = 2116$
 $12x + 12y = 200$
- C. $x + y = 200$
 $8x + 12y = 2116$
- D. $x + y = 2116$
 $8x + 12y = 200$

- 10 Which of the following is equivalent to the expression below?

$$|4 - 7|$$

- A. $|7 - 4|$
- B. $|7 + 4|$
- C. $4 - 7$
- D. $4 + 7$

- 11 What are all the solutions of the equation below?

$$x^2 - 10 = 0$$

- A. $x = \sqrt{10}$; $x = -\sqrt{10}$
- B. $x = 10$; $x = -10$
- C. $x = \sqrt{5}$
- D. $x = 5$

- 12 If the equation below is true for all real values of x , which of the following belongs in the box?

$$x \div \boxed{?} = x$$

- A. 1
- B. 0
- C. $\frac{1}{x}$
- D. x

- 13 The charges to repair Naomi's car are shown below.

Car Repair Charges

Labor	\$187.50
Parts	\$ 68.40
Towing	\$ 25.50

The charge for parts is closest to which percent of the total charges?

- A. 10%
- B. 25%
- C. 33%
- D. 50%

- 14 Which of the following is equivalent to the expression below?

$$(x - 2)(x + 5)$$

- A. $x^2 - 7x - 10$
- B. $x^2 - 3x - 10$
- C. $x^2 + 3x - 10$
- D. $x^2 + 7x - 10$

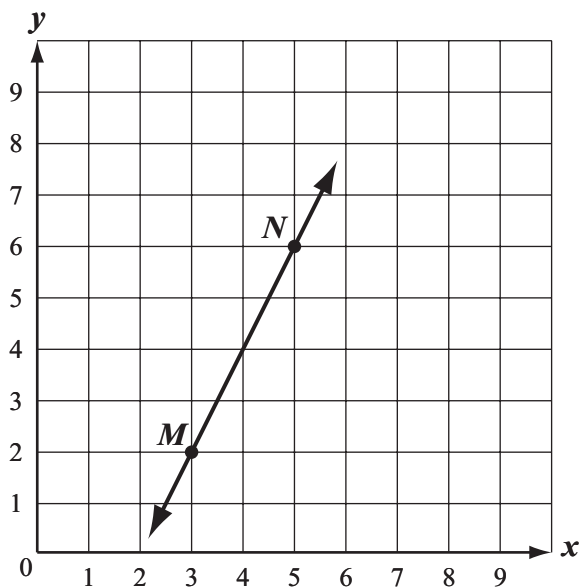
Questions 15 and 16 are short-answer questions. Write your answers to these questions in the boxes provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

- 15 What whole number is equivalent to the expression below?

$$\sqrt{64 \cdot 100}$$

Write your answer to question 16 in the box provided in your Student Answer Booklet.

- 16 On the coordinate grid below, \overleftrightarrow{MN} contains points $M(3, 2)$ and $N(5, 6)$.



What is the slope of \overleftrightarrow{MN} ?

Question 17 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 17 in the space provided in your Student Answer Booklet.

- 17** Jay and Tia are planning to buy snack chips.
- Individual bags of chips cost \$3.00 each.
 - Each case of chips contains 10 bags and costs \$25.00.
- a. If Jay buys 1 case of chips, what is the cost per bag? Show or explain how you got your answer.
- b. How much money would Jay save if he bought 4 cases of chips instead of 40 individual bags of chips? Show or explain how you got your answer.
- c. If Tia buys 20 individual bags of chips and Jay buys 3 cases of chips, what is the cost **per bag** for all of these chips together? Show or explain how you got your answer.
- d. Next week individual bags of chips will be on sale. The price of each individual bag will be reduced by 20%. Which of the following will cost less?
- 10 individual bags of chips on sale
- or**
- 1 case of chips at the regular case price

Show or explain how you got your answer.

Questions 18 and 19 are short-answer questions. Write your answers to these questions in the boxes provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

- 18 The probability of randomly selecting a blue tile from a bag of tiles is $\frac{2}{7}$. There are 12 blue tiles in the bag. What is the total number of tiles in the bag?

- 19 What is the solution of the equation below?

$$2x - 6 = 8$$

Questions 20 and 21 are open-response questions.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF EACH QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

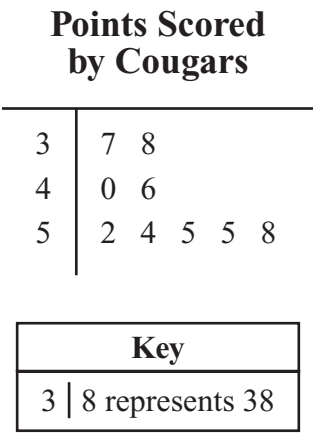
Write your answer to question 20 in the space provided in your Student Answer Booklet.

- 20** Jack plans to complete a 12-mile route for a fundraiser. He will run part of the route and walk the rest.

- Jack walks at an average speed of 3 miles per hour.
 - He runs at an average speed of 6 miles per hour.
- a. If Jack walks for 2 hours, what is the distance, in miles, that he will walk? Show or explain how you got your answer.
- Let x and y be defined as follows:
- x = the number of hours Jack will walk for the fundraiser
 - y = the number of hours Jack will run for the fundraiser
- b. Write an expression in terms of x that represents the distance, in miles, Jack will walk for the fundraiser.
- c. Write an expression in terms of y that represents the distance, in miles, Jack will run for the fundraiser.
- d. Write an equation in terms of x and y to show that the sum of the distance Jack walks and the distance he runs is 12 miles.
- e. On the grid in your Student Answer Booklet, graph the equation you wrote in part (d). Be sure to label the x -axis and the y -axis, indicate the scale on each axis, and include a title for your graph.

Write your answer to question 21 in the space provided in your Student Answer Booklet.

- 21 The Cougars have played 9 games so far this season. The stem-and-leaf plot below shows the number of points scored by the Cougars in each of these games.



- a. What is the range of the number of points scored in the 9 games? Show or explain how you got your answer.
- b. What is the mode of the number of points scored in the 9 games? Show or explain how you got your answer.
- c. What is the median number of points scored in the 9 games? Show or explain how you got your answer.
- d. The Cougars will play one more game. What is the greatest possible median number of points scored in all 10 games? Explain how you got your answer.

Mathematics

SESSION 2

*You may use your reference sheet during this session.
You may use a calculator during this session.*



DIRECTIONS

**This session contains eighteen multiple-choice questions and three open-response questions.
Mark your answers to these questions in the spaces provided in your Student Answer Booklet.**

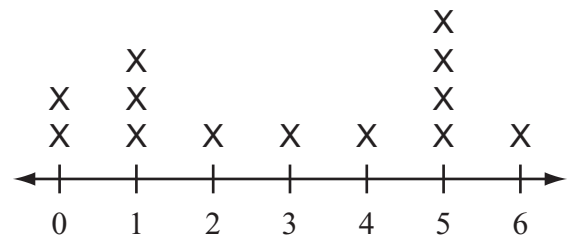
- 22** The first four numbers in a geometric sequence are shown below.

2, 8, 32, 128, . . .

What is the next number in the sequence?

- A. 160
- B. 224
- C. 256
- D. 512

- 23** Ira made the line plot below to show the number of words spelled correctly by each person in a spelling bee.



Number of Words Spelled Correctly

What was the mode of the numbers of words spelled correctly?

- A. 1
- B. 3
- C. 5
- D. 6

- 24 If 5 people equally share the total cost of a rental van, each person will pay \$360.

If 9 people equally share the same total cost of the rental van, how much will each person pay?

- A. \$72
- B. \$90
- C. \$200
- D. \$288

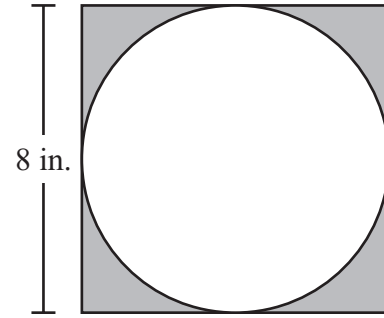
- 25 Reggie has four refrigerator magnets, each labeled with a different number. The numbers are 1, 2, 3, and 4.

What is the total number of different 2-digit numbers Reggie could make with these magnets?

- A. 8
- B. 10
- C. 12
- D. 16

- 26 A circular mirror is mounted in a frame. The frame is in the shape of a square that measures 8 inches on each side.

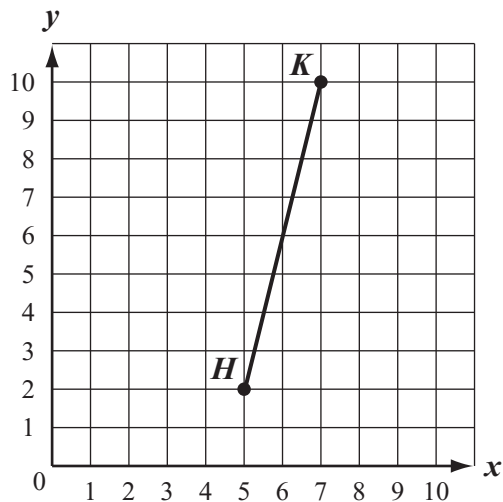
In the diagram below, a circle representing the mirror is inscribed in a square representing the frame.



Which of the following is closest to the circumference of the mirror?

- A. 12.56 in.
- B. 25.12 in.
- C. 50.24 in.
- D. 100.48 in.

- 27 The coordinate grid below shows point $H(5, 2)$, point $K(7, 10)$, and \overline{HK} .



What is the slope of \overline{HK} ?

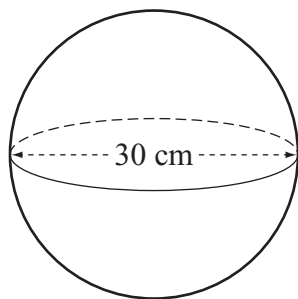
- A. -4
- B. $-\frac{1}{4}$
- C. $\frac{1}{4}$
- D. 4

- 28 A truck cost \$30,000 in the year 2004. For each year after 2004, the value of the truck was 20% less than its value the previous year.

What was the value of the truck in the year 2007?

- A. \$12,000
- B. \$15,360
- C. \$18,000
- D. \$19,200

- 29 Greg has a spherical beach ball. The diagram below shows the beach ball and its diameter.



For a school project, Greg will paint the entire outside surface of the beach ball. Which of the following is closest to the area of the surface that Greg will paint?

- A. 377 cm^2
- B. $2,826 \text{ cm}^2$
- C. $14,130 \text{ cm}^2$
- D. $35,495 \text{ cm}^2$

- 30 Suppose the equation below is true.

$$7 + (m - n) = 0$$

Which of the following must also be true?

- A. $m - n = 7$
- B. $m - n = 0$
- C. $m - n = -1$
- D. $m - n = -7$

Question 31 is an open-response question.

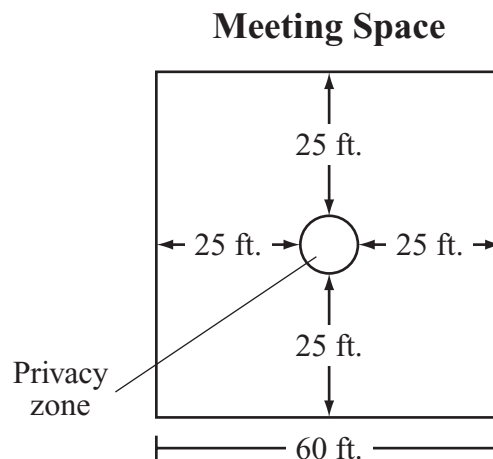
- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 31 in the space provided in your Student Answer Booklet.

- 31** Susan is a security specialist at her workplace. She is designing where to place voice and motion detectors in a square meeting space that measures 60 feet on each side.

- a. What is the perimeter, in feet, of the meeting space? Show or explain how you got your answer.

Susan also created a “privacy zone” in the center of the meeting space. The privacy zone is where the voice and motion detectors do not work and is marked on the floor with a circle. As shown in the diagram below, the shortest distance from the circle to each side of the square is 25 feet.



- b. What is the circumference, in feet, of the circle? Show or explain how you got your answer.
- c. What is the area, in square feet, of the part of the meeting space that is inside the circle? Show or explain how you got your answer.
- d. What is the area, in square feet, of the part of the meeting space that is **outside** the circle? Show or explain how you got your answer.

Mark your answers to multiple-choice questions 32 through 40 in the spaces provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

- 32 There were six erasers in a drawer. The colors of the erasers are listed below.

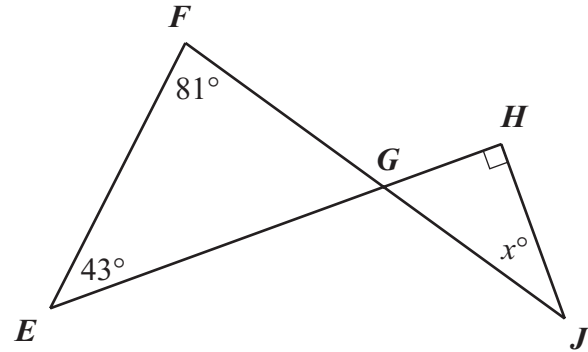
- 2 blue erasers
- 2 red erasers
- 2 green erasers

Justin took one eraser out of the drawer. The eraser was blue. He does not put it back in the drawer.

If he takes another eraser out of the drawer at random, what is the probability that the second eraser also will be blue?

- A. $\frac{1}{6}$
- B. $\frac{1}{5}$
- C. $\frac{1}{3}$
- D. $\frac{1}{2}$

- 33 In the diagram below, \overline{EH} intersects \overline{FJ} at point G .



Based on the angle measures in the diagram, what is the value of x ?

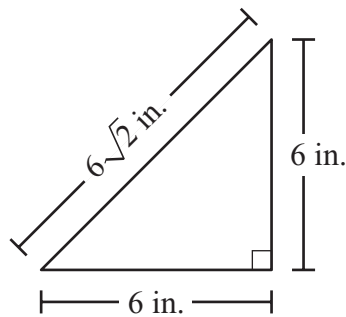
- A. 34
- B. 38
- C. 43
- D. 56

- 34 Dana drew two circles of different sizes. The area of the larger circle is 16 times the area of the smaller circle.

The radius of the larger circle is how many times the radius of the smaller circle?

- A. 2
- B. 4
- C. 8
- D. 16

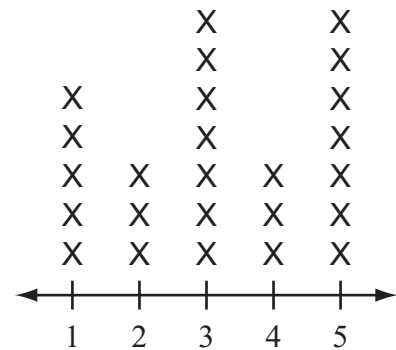
- 35 The diagram below shows a triangle and its dimensions.



What is the area, in square inches, of the triangle?

- A. 18
- B. $18\sqrt{2}$
- C. 36
- D. $36\sqrt{2}$

- 36 The line plot below shows the amount of money each of 25 people spent on bottles of water during a one-week period.

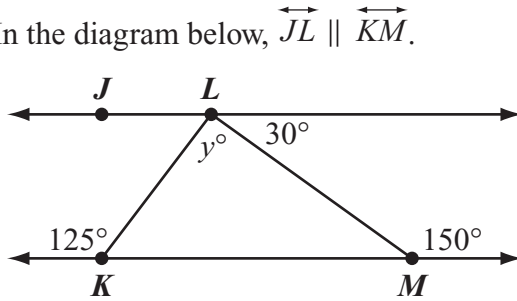


Amount of Money Spent (\$)

What is the total amount of money spent by those people who spent \$4 or more on bottles of water during the one-week period?

- A. \$10
- B. \$12
- C. \$35
- D. \$47

- 37 In the diagram below, $\overleftrightarrow{JL} \parallel \overleftrightarrow{KM}$.



Based on the angle measures in the diagram, what is the value of y ?

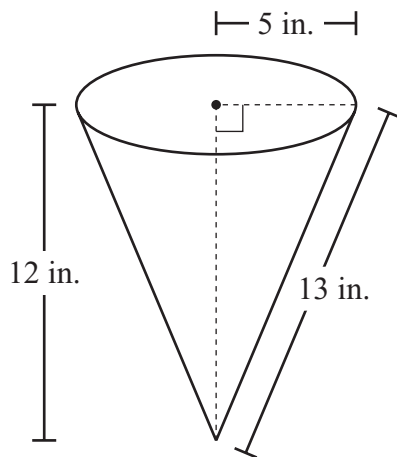
- A. 75
- B. 90
- C. 95
- D. 120

- 38 Point H is located at $(-3, 5)$ on a coordinate grid. Point H is then reflected over the y -axis.

What are the coordinates of the image of point H ?

- A. $(3, 5)$
- B. $(5, -3)$
- C. $(-3, -5)$
- D. $(-5, 3)$

- 39 A container in the shape of a right circular cone is used to hold snacks at a town fair. The radius of the cone is 5 inches, as shown in the diagram below.



Based on the dimensions in the diagram, which of the following is closest to the lateral surface area of the cone?

- A. 188 sq. in.
- B. 204 sq. in.
- C. 377 sq. in.
- D. 408 sq. in.

- 40 Which of the following is the solution of the system of equations below?

$$\begin{aligned}4x + y &= 5 \\2x - 3y &= 13\end{aligned}$$

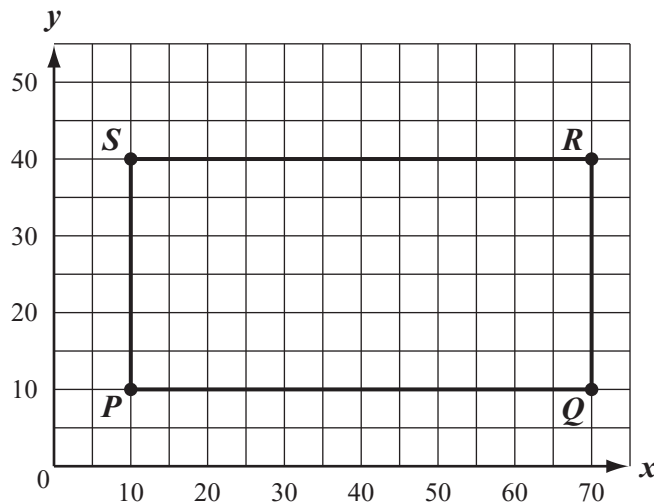
- A. $x = 1$; $y = 1$
- B. $x = 2$; $y = 3$
- C. $x = 2$; $y = -3$
- D. $x = 3$; $y = -7$

Questions 41 and 42 are open-response questions.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF EACH QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 41 in the space provided in your Student Answer Booklet.

- 41** Gary makes signal flags for use in sailing. He drew rectangle $PQRS$ on a coordinate grid to represent a flag, with vertices $P(10,10)$, $Q(70,10)$, $R(70,40)$, and $S(10,40)$, as shown below.



- What is the length, in units, of \overline{PQ} ? Show or explain how you got your answer.
- What is the length, in units, of \overline{SP} ? Show or explain how you got your answer.

Copy the x -axis, the y -axis, and rectangle $PQRS$ onto the grid in your Student Answer Booklet. Define the midpoint of each side of rectangle $PQRS$ as follows:

- W is the midpoint of \overline{PQ} .
 - X is the midpoint of \overline{QR} .
 - Y is the midpoint of \overline{RS} .
 - Z is the midpoint of \overline{SP} .
- On your coordinate grid, plot the midpoints W , X , Y , and Z .
 - Label each midpoint with its letter and coordinates.
 - Show or explain how you determined the coordinates of each midpoint.
 - Draw quadrilateral $WXYZ$.
 - On the flag, quadrilateral $WXYZ$ represents the boundary of a region that will be colored red. What is the perimeter, in units, of quadrilateral $WXYZ$? Show or explain how you got your answer.

Write your answer to question 42 in the space provided in your Student Answer Booklet.

- 42 To measure weather conditions, a weather scientist drops electronic sensors from an airplane. After a sensor falls for a while, its parachute opens.

The airplane flies at an altitude of 60,000 feet above the ground. The scientist uses the equations below to describe the motion of a sensor after it is dropped from the airplane but before its parachute opens.

$$v = 32t$$

$$h = -16t^2 + 60,000$$

In the equations, t , v , and h are defined as follows:

- t = the number of seconds after a sensor is dropped
- v = the speed, in feet per second, of a sensor t seconds after it is dropped
- h = the height above the ground, in feet, of a sensor t seconds after it is dropped

Use the scientist's equations to answer the questions below.

- What is the speed, in feet per second, of a sensor 5 seconds after it is dropped? Show or explain how you got your answer.
- How many seconds after a sensor is dropped will its speed be 384 feet per second? Show or explain how you got your answer.
- What is the height above the ground, in feet, of a sensor 5 seconds after it is dropped? Show or explain how you got your answer.
- How many seconds after a sensor is dropped will its height be 50,000 feet above the ground? Show or explain how you got your answer.



Massachusetts Comprehensive Assessment System Grade 10 Mathematics Reference Sheet

AREA FORMULAS

square $A = s^2$

rectangle $A = bh$

parallelogram $A = bh$

triangle $A = \frac{1}{2}bh$

trapezoid $A = \frac{1}{2}h(b_1 + b_2)$

circle $A = \pi r^2$

LATERAL SURFACE AREA FORMULAS

right rectangular prism $LA = 2(hw) + 2(lh)$

right circular cylinder $LA = 2\pi rh$

right circular cone $LA = \pi r\ell$
(ℓ = slant height)

right square pyramid $LA = 2s\ell$
(ℓ = slant height)

TOTAL SURFACE AREA FORMULAS

cube $SA = 6s^2$

right rectangular prism $SA = 2(lw) + 2(hw) + 2(lh)$

sphere $SA = 4\pi r^2$

right circular cylinder $SA = 2\pi r^2 + 2\pi rh$

right circular cone $SA = \pi r^2 + \pi r\ell$
(ℓ = slant height)

right square pyramid $SA = s^2 + 2s\ell$
(ℓ = slant height)

VOLUME FORMULAS

cube $V = s^3$
(s = length of an edge)

right rectangular prism $V = lwh$

OR

$V = Bh$
(B = area of a base)

sphere $V = \frac{4}{3}\pi r^3$

right circular cylinder $V = \pi r^2 h$

right circular cone $V = \frac{1}{3}\pi r^2 h$

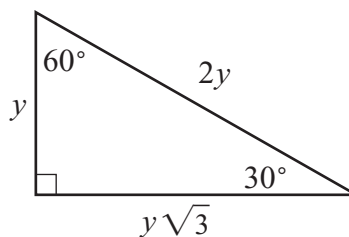
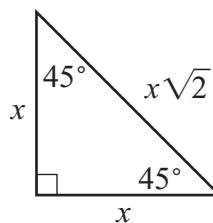
right square pyramid $V = \frac{1}{3}s^2 h$

CIRCLE FORMULAS

$C = 2\pi r$

$A = \pi r^2$

SPECIAL RIGHT TRIANGLES



Mathematics Retest
November 2009 Released Items:
Reporting Categories, Standards, and Correct Answers*

Item No.	Page No.	Reporting Category	Standard	Correct Answer (MC)*
1	39	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	A
2	39	<i>Patterns, Relations, and Algebra</i>	10.P.3	D
3	40	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	B
4	40	<i>Number Sense and Operations</i>	10.N.1	D
5	40	<i>Patterns, Relations, and Algebra</i>	10.P.3	A
6	41	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	B
7	41	<i>Number Sense and Operations</i>	10.N.2	B
8	41	<i>Number Sense and Operations</i>	8.N.10	C
9	42	<i>Patterns, Relations, and Algebra</i>	10.P.8	C
10	42	<i>Number Sense and Operations</i>	10.N.2	A
11	42	<i>Patterns, Relations, and Algebra</i>	10.P.5	A
12	43	<i>Number Sense and Operations</i>	10.N.1	A
13	43	<i>Number Sense and Operations</i>	10.N.4	B
14	43	<i>Patterns, Relations, and Algebra</i>	10.P.3	C
15	44	<i>Number Sense and Operations</i>	10.N.2	80
16	45	<i>Geometry</i>	10.G.7	2
17	46	<i>Number Sense and Operations</i>	8.N.12	
18	47	<i>Data Analysis, Statistics, and Probability</i>	8.D.4	42
19	47	<i>Patterns, Relations, and Algebra</i>	10.P.6	$x = 7$
20	48	<i>Patterns, Relations, and Algebra</i>	10.P.2	
21	49	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	
22	50	<i>Patterns, Relations, and Algebra</i>	10.P.1	D
23	50	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	C
24	51	<i>Patterns, Relations, and Algebra</i>	10.P.7	C
25	51	<i>Data Analysis, Statistics, and Probability</i>	8.D.4	C
26	51	<i>Measurement</i>	10.M.1	B
27	52	<i>Geometry</i>	10.G.7	D
28	52	<i>Patterns, Relations, and Algebra</i>	10.P.7	B
29	53	<i>Measurement</i>	10.M.2	B
30	53	<i>Number Sense and Operations</i>	10.N.1	D
31	54	<i>Measurement</i>	10.M.1	
32	55	<i>Data Analysis, Statistics, and Probability</i>	8.D.4	B
33	55	<i>Geometry</i>	10.G.5	A
34	56	<i>Measurement</i>	10.M.3	B
35	56	<i>Measurement</i>	10.M.1	A
36	56	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	D
37	57	<i>Geometry</i>	10.G.3	C
38	57	<i>Geometry</i>	10.G.9	A
39	58	<i>Measurement</i>	10.M.2	B
40	58	<i>Patterns, Relations, and Algebra</i>	10.P.8	C
41	59	<i>Geometry</i>	10.G.7	
42	60	<i>Patterns, Relations, and Algebra</i>	10.P.7	

*Answers are provided here for multiple-choice items and short-answer items only. Each open-response item has its own set of scoring guidelines, which allow for valid alternate interpretations and responses.